

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Spectrum Needs of Emergency Response Providers)	WT Docket No. 05-157
)	

COMMENTS OF THE SATELLITE INDUSTRY ASSOCIATION

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The Satellite Industry Association (“SIA”) hereby files these Comments in the above-captioned proceeding in which the Commission is preparing a study for Congress on the spectrum needs of emergency response providers and whether commercial technologies can meet those needs. As discussed herein, commercial satellites offer unique capabilities that meet the demand of the public safety community for ubiquitous and interoperable broadband communications networks. In fact, commercial satellites are being used today to meet the needs of emergency responders. Moreover, satellite operators are investing billions of dollars in next-generation systems that will offer new and even better services for the public safety community. To ensure the continued availability and development of these networks to support the needs of emergency response providers, the Commission should report in its study that (i) existing satellite spectrum must be preserved and protected from harmful interference; (ii) any additional public safety spectrum allocations allow emergency response providers to select satellite services as a component of spectrum use to meet their growing requirements; and (iii) the Commission’s rules and policies should afford satellite operators sufficient technical flexibility to continue to meet the needs of the public safety community.

SIA. SIA is a U.S.-based trade association providing worldwide representation of the leading satellite operators, service providers, manufacturers, launch services providers, remote

sensing operators, and ground equipment suppliers. SIA is the unified voice of the U.S. satellite industry on policy, regulatory, and legislative issues affecting the satellite business. SIA includes Executive Members: The Boeing Company; Globalstar LLC; Hughes Network Systems, Inc.; ICO Global Communications; Intelsat; Iridium Satellite LLC; Lockheed Martin Corp.; Loral Space & Communications Ltd.; Mobile Satellite Ventures LP; Northrop Grumman Corporation; PanAmSat Corporation; and SES Americom, Inc.; and Associate Members Eutelsat Inc., Inmarsat Ltd., New Skies Satellites Inc., Stratos Global Corporation, and The DirecTV Group.

Intelligence Reform Act. On December 17, 2004, President George W. Bush signed into law the Intelligence Reform and Terrorism Prevention Act of 2004 (“Intelligence Reform Act” or “Act”).¹ The Act requires the Commission, in consultation with the Secretary of Homeland Security and the National Telecommunications and Information Administration, to conduct a study of the short-term and long-term spectrum needs of Federal, State, and local emergency response providers. *Intelligence Reform Act* § 7502(a). The Act requires the Commission to consider the use of commercial wireless technologies in meeting the needs of first responders for nationwide interoperable broadband communications networks. *Id.* § 7502(c)(2). The Commission must submit the findings of its study to Congress by December 17, 2005. *Id.* § 7502(d). In the above-captioned proceeding, the Commission is seeking comment from emergency response providers and other interested parties in preparation of this study.²

¹ Intelligence Reform and Terrorism Prevention Act of 2004, Pub. L. No. 108-458, 118 Stat. 3638 (2004) (“*Intelligence Reform Act*”).

² See *Public Notice, Federal Communications Commission Seeks Comment on Spectrum Needs of Emergency Response Providers*, WT Docket No. 05-157, FCC 05-80 (March 29, 2005) (“*Public Notice*”).

Discussion

I. COMMERCIAL SATELLITE OPERATORS OFFER UNIQUE CAPABILITIES THAT MEET THE CRITICAL NEEDS OF EMERGENCY RESPONSE PROVIDERS

Satellites offer certain unique capabilities that meet the critical needs of emergency response providers for ubiquitous and interoperable communications networks. The Commission has specifically recognized the unique capabilities of satellite networks in meeting the needs of the public safety community.³

First, unlike any other communications technology, satellites are capable of providing truly ubiquitous coverage, from the most rural areas to the densest urban cores. This is critically important in remote areas that lack adequate telecommunications infrastructure.⁴ Satellites thus alleviate the concern that a particular emergency site will be beyond the reach of terrestrial wireline or wireless networks.⁵ Moreover, unlike terrestrial systems, satellite systems provide

³ See *Establishing Rules and Policies for the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L-band*, Notice of Proposed Rulemaking, 11 FCC Rcd 11675, 11681 ¶ 12 (1996) (noting that satellites “provide emergency communications to any area in times of emergencies and natural disasters”); *Amendment of Section 2.106 of the Commission’s Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service*, Notice of Proposed Rulemaking, 10 FCC Rcd 3230, ¶ 7 (1995) (noting that satellites “provide nationwide public safety coverage. . . . [and] could satisfy important requirements that cannot be economically satisfied by other means”); *Qualcomm Incorporated*, Order, DA 00-2438, ¶ 7 (Chief, Wireless Bureau, Oct. 30, 2000) (explaining that satellites “may provide an important additional emergency telecommunications resource, especially to callers located in remote and rural areas and callers located in underpopulated regions where neither landline nor terrestrial mobile services exists”).

⁴ See *Extending Wireless Telecommunications Services To Tribal Lands*, Report and Order and Further Notice of Proposed Rulemaking, 15 FCC Rcd 11794, ¶ 13 (June 30, 2000) (“Satellites also provide communications opportunities for communities in geographically isolated areas, such as mountainous regions and deep valleys, where rugged and impassable terrain may make service via terrestrial wireless or wireline telephony economically impractical.”).

⁵ See Amy Hancock, *The Disaster Relief Equation*, Satellite Communications, July 1, 2000 (quoting director of administration for the American Red Cross as stating “With satellite technology, we’re fairly confident that wherever we go, the phone is going to work. This gives

coverage not only of the nation's land mass, but of the skies above and of inland and surrounding waterways as well.⁶ This is of critical importance to enable communications with aircraft or watercraft en route to the scene of an emergency, which may not be possible with a terrestrial-only infrastructure. In addition, due to their nationwide footprint, satellites are the most effective technology for providing point-to-multipoint services, such as dispatch service, over a wide area.

Second, because a satellite operator provides coverage of the entire nation, it offers a single point of contact for designing an interoperable communications network. The Government Accountability Office ("GAO") recently found that a key hurdle in establishing a nationwide interoperable network is the use by public safety agencies of different frequency bands or non-compatible equipment that uses the same frequency band.⁷ The ability to coordinate efforts among multiple responders arriving at the same emergency site is significantly enhanced if the public safety organizations rely on compatible communications technologies.

us the confidence that when we go out to a disaster relief scene, we'll be able to communicate and help the people affected by the disaster.").

⁶ See *Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5925-6425 MHz/3700-4200 MHz Bands and 14.0-14.5 GHz/ 11.7-12.2 GHz Bands, Report and Order*, FCC 04-286 (January 6, 2005) ("ESV Order") (establishing licensing and service rules for Earth Stations on Vessels ("ESVs") in the C-band and Ku-band); *Service Rules and Procedures to Govern the Use of Aeronautical Mobile Satellite Service Earth Stations in Frequency Bands Allocated to the Fixed Satellite Service, Notice of Proposed Rulemaking*, FCC 05-14 (February 9, 2005) (proposing rules for operation of aircraft earth stations in the Ku-band); *Boeing Company, Order and Authorization*, 16 FCC Rcd 22645 (Int'l Bur. & OET, 2001) ("Boeing Order") (permitting operation of two-way mobile terminals aboard aircraft in the Ku-band); *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands, Report and Order*, 18 FCC Rcd 1962, FCC 03-15, IB Docket No. 01-185 (February 10, 2003) ("ATC Order"), at ¶ 1 ("ATC Order") (noting that MSS systems can provide mobile services "on land, in the air and over the oceans").

⁷ See Written Statement of William O. Jenkins, Jr., Director, Homeland Security and Justice Issues, United States Government Accountability Office, "Homeland Security – Federal Leadership Needed to Facilitate Interoperable Communications Between First Responders," Testimony Before the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census, House of Representatives (September 8, 2004).

Due to their ubiquitous coverage, satellites can play an important role in facilitating interoperability. Indeed, U.S. Navy Admiral Timothy J. Keating, commander of the U.S. Northern Command, recently urged the U.S. government to use a satellite communications network to link federal, state, and local officials during homeland security crises.⁸

Third, satellite space infrastructure is effectively immune from natural and man-made disasters. Satellites are located thousands of miles above the earth and are thus not impacted by ground-based disasters. Many satellite operators also have in-orbit spares in the event of a satellite failure. Satellites are not impacted by failures in the power grid or damage to underground telephone lines. Moreover, satellite operators deploy their ground stations in geographically diverse locations to avoid a single point of failure. When local wireline or wireless terrestrial-based communications systems are impacted by a disaster, satellite systems are still able to provide critical communications capabilities.⁹ Satellite operators have demonstrated their dependability following the terrorist attacks in New York and Washington on September 11, 2001¹⁰ as well as during natural disasters, such as hurricanes and floods.¹¹

⁸ See *Satellite Network Touted for Homeland Security*, Space News, April 11, 2005, at 3 (“Keating said a dedicated satellite network would allow officials ranging from state governors to local fire chiefs to communicate during a crisis.”).

⁹ See Tom D. Soumas Jr. and Dave Robertson, *Satellite Communications for Public Safety*, Mobile Radio Technology, January 2000 (“The benefits of mobile satellite communications for rural areas is obvious, but important benefits exist for urban areas as well, where satellite systems can provide essential backup for existing terrestrial systems. In a metropolitan area, where there are multiple layers of excellent, modern communications facilities, there is still an inherent vulnerability to disruption from natural disasters, such as earthquakes in California, hurricanes in Florida, ice storms in Massachusetts and tornadoes in Kansas.”).

¹⁰ See *Rescue Workers Get New Phones*, St. Petersburg Times, September 18, 2001 (noting that President Bush had 200 satellite phones delivered to the World Trade Center site after New York City Mayor Rudolph Giuliani complained that cell phones in lower Manhattan did not work); *Satellite Phones Show Value as Supplemental Service*, Satellite Today, September 14, 2001 (discussing use of satellite phones after September 11th attacks).

Immediately after September 11, 2001, the National Communications System began distributing satellite phones to federal agencies to use in the event of an emergency. When Hurricane Charley hit Florida in August 2004, MSS operators provided satellite phones and free airtime to persons in storm-stricken areas, providing them with voice and data service when the local terrestrial telecommunications infrastructure was damaged.

Fourth, in addition to voice and data services, satellites can provide emergency responders with access to broadband video. Some satellite operators offer live video feeds of a disaster scene back to a command center.¹² Thus, satellites can serve as a primary means of video communications in emergency situations or as a back-up in case terrestrial infrastructure is down.

Fifth, satellite technology allows for the dynamic reassignment of spectrum resources to those geographic areas most in need of communications capabilities, such as during a disaster. As examples, a fixed satellite link serving rural education within a continental-United States (“CONUS”) satellite beam could readily be reassigned to support a disaster recovery application in a different place in the country. Similarly, an MSS provider could divert switched capacity from one portion of the country to another to support a disaster recovery contingency. This geographic versatility is especially critical in providing back-up service for terrestrial-based services.

Finally, satellites can even allow for international interoperability. Satellites provide coverage not only of the United States, but of Canada, Mexico, the Caribbean, and points beyond

¹¹ See Peter J. Brown, *Satellite Solutions Emerge for Disaster Response*, Via Satellite, January 3, 2005 (discussing use of satellites in responding to natural and man-made disasters); Soumas and Robinson, *supra* note 9 (discussing use of satellites in responding to natural and man-made disasters).

¹² See Brown, *supra* note 11 (discussing use of satellites for providing video communications during disasters).

as well. This transnational coverage capability enables satellites to offer an international interoperable communications capability. Such a capability is particularly useful in facilitating international cooperation in areas along the United States borders with Canada and Mexico.

Given these unique attributes, satellites are already being used to support the communications needs of emergency response providers and other governmental authorities. Indeed, the 2004 National Security Telecommunications Advisory Committee (“NSTAC”) Satellite Task Force Report to the President found that the commercial satellite industry is critical to national, economic, and homeland security. Satellites are being used today to provide critical services to numerous local police and fire departments, state agencies, the United States Coast Guard, the Federal Emergency Management Agency (“FEMA”), the Center for Disease Control and Prevention (“CDC”), and the American Red Cross, among many others.¹³ Homeland security interests are using commercial satellites for critical activities such as direct and back-up communications, emergency response services, continuity of operations during emergencies, military support, and intelligence gathering. The Federal Government is increasingly reliant upon commercial satellite infrastructure for data, voice, and video communications services. Commercial satellites support many significant services for the Federal Government, including navigation, remote sensing, and imaging.

Satellite operators are also investing billions of dollars in next-generation systems that will offer even more attractive services. For example, next-generation MSS systems will offer

¹³ See Remarks of FCC Commissioner Michael J. Copps, SIA/SBCA Folger Library Dinner (March 22, 2005) (“I appreciate the critical role satellites are already fulfilling with our government using satellites as primary communications systems and to back-up other critical communications and to provide diversity and redundancy. Over 80% of federal agencies are using satellites to communicate, from FEMA to the Coast Guard to our customs and border control agents. With satellites, our communications infrastructure is more resilient and more difficult to undermine.”).

smaller, lighter, and more attractive portable terminals with substantially higher data rates than current systems. These systems will be more powerful than current systems and will offer substantially increased capacity. One of the key beneficiaries of this significant investment in new satellite technology will be the public safety community, which will enjoy tremendous improvements in functionality on a ubiquitous basis.

II. SATELLITE SPECTRUM MUST BE PRESERVED AND PROTECTED SO THAT SATELLITE OPERATORS CAN CONTINUE TO MEET THE NEEDS OF EMERGENCY RESPONSE PROVIDERS

The unique capabilities of satellites to serve the needs of emergency responders mandate that the Commission (i) preserve existing satellite allocations and protect them from harmful interference; (ii) ensure that any additional public safety spectrum allocations allow for flexible use by the public safety community, including the ability to select satellite services as a component of spectrum use to meet their growing requirements; and (iii) continue to afford satellite operators sufficient technical flexibility to meet the needs of the public safety community.

In recent years, the Commission has reallocated critical satellite spectrum, including MSS spectrum that the Commission had specifically identified as capable of satisfying important public safety needs.¹⁴ In addition, the Commission has permitted an unlimited number of devices to operate in certain satellite bands, subjecting critical satellite spectrum to increased

¹⁴ See *Amendment of Part 2 of the Commission's Rules, Report and Order, Fourth Report and Order and Further Notice of Proposed Rulemaking*, FCC 04-134, 19 FCC Rcd 13356 (July 16, 2004) (reallocating 5 MHz of Big LEO MSS spectrum to primary terrestrial use); *Amendment of Part 2 of the Commission's Rules, Third Report and Order, Third Notice of Proposed Rulemaking and Second Memorandum Opinion and Order*, 18 FCC Rcd 2223 (2003) (reallocating 30 MHz of 2 GHz MSS spectrum to terrestrial services); *Amendment of Section 2.106 of the Commission's Rules, Notice of Proposed Rulemaking*, 10 FCC Rcd 3230, ¶ 7 (1995) (noting that 2 GHz MSS "can provide nationwide public safety coverage. . . . [and] could satisfy important requirements that cannot be economically satisfied by other means").

interference.¹⁵ These bands are already heavily utilized and are subject to extensive sharing between multiple satellite services and between satellite services and licensed terrestrial services. If unlicensed users are permitted to operate in satellite bands without adequate restrictions, a community of users may develop that will make it difficult for the Commission to enforce policies that are required to protect satellite systems. The Commission's actions to reallocate satellite spectrum and to subject satellite bands to increased interference have not served the needs of emergency response providers for nationwide interoperable broadband networks, let alone general consumers. Rather, only by preserving existing satellite allocations and ensuring that these allocations are protected from harmful interference can the Commission ensure that the spectrum needs of emergency responders will be met.

In addition to preserving existing satellite allocations, the Commission should also seek to ensure that any additional public safety spectrum allocations allow for flexible use by the public safety community. This flexibility would enable emergency response providers to select satellite services as a component of spectrum use to meet their growing requirements. As discussed above, the Commission has recognized that satellites are ideal for meeting the communications needs of public safety organizations, yet it has proceeded to reallocate critical satellite spectrum to other uses. Given the increasing demand of emergency responders for ubiquitous and interoperable broadband communications networks and the unique ability of satellites to satisfy this demand, the Commission should facilitate, not hinder, the ability

¹⁵ See, e.g., *Wireless Operations in the 3650-3700 MHz Band, Report and Order and Memorandum Opinion and Order*, ET Docket No. 04-151 et al, FCC 05-56 (March 16, 2005) (allowing an unlimited number of wireless devices to operate in the extended C-band on a non-exclusive basis subject to registration); *Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems, First Report and Order*, 17 FCC Rcd 7435 (April 22, 2002) (allowing unlicensed ultra-wideband devices to operate in satellite bands).

of emergency response providers to integrate satellite services into their public safety spectrum planning. The Commission should also solicit comment on the potential for additional government and/or commercial satellite allocations that would allow satellites to communicate directly with existing and planned terrestrial public safety equipment and the public to extend and back-up terrestrial infrastructure during an emergency.

Finally, the Commission should ensure that its rules and policies afford satellite operators sufficient technical flexibility to continue to satisfy the demands of the public safety community. The Commission has expanded the communications options for emergency responders by providing Fixed Satellite Service operators with the flexibility to deploy earth stations on vessels and on airplanes, and by providing Mobile Satellite Services operators with the flexibility to supplement their satellite service with an ancillary terrestrial component (“ATC”).¹⁶ Indeed, the potential for a nationwide interoperable public safety network was one of the key factors resulting in the decision to allow MSS operators to integrate ATC into their networks:

By offering ubiquitous coverage with instant, nationwide interoperability, ATC-enhanced MSS may make the public, law enforcement and public-safety organizations easier to reach in the field, regardless of location. Accordingly, MSS ATC may enhance the nation’s overall ability to maintain critical telecommunications infrastructure in times of crisis or disaster.¹⁷

The Commission’s technical rules and policies should continue to evolve in ways that enable satellite operators to serve the needs of emergency responders.

¹⁶ See *ESV Order*, *supra* note 6; *Boeing Order*, *supra* note 6; *ATC Order*, *supra* note 6; see also *Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5925-6425 MHz/3700-4200 MHz Bands and 14.0-14.5 GHz/ 11.7-12.2 GHz Bands*, *Notice of Proposed Rulemaking*, FCC 03-286 (November 24, 2003), at ¶ 23 (noting that ESVs can “expand the maritime communications options for government operators”).

¹⁷ See *ATC Order* ¶ 29.

Conclusion

As discussed herein, the Commission should report in its study that commercial satellites are uniquely capable of meeting the needs of emergency response providers for ubiquitous and interoperable broadband communications networks. To ensure the continued availability and development of these networks to support the needs of emergency response providers, the Commission should report in its study that (i) existing satellite spectrum must be preserved and protected from harmful interference; (ii) any additional public safety spectrum allocations allow emergency response providers to select satellite services as a component of spectrum use to meet their growing requirements; and (iii) the Commission's rules and policies should afford satellite operators sufficient technical flexibility to continue to meet the needs of the public safety community.

Respectfully submitted,

SATELLITE INDUSTRY ASSOCIATION

A handwritten signature in black ink, appearing to read "David Cavossa", with a stylized flourish at the end.

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